

**Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently amended) A method for producing hyperpolarized  $^{129}\text{Xe}$  comprising
  - a) preparing a mixture of xenon, at least one solvent or a mixture of solvents ~~which is a~~  
selected from the group of single chain alcohols, or a glycols, toluene, cyclopentane and methylcyclohexane, ~~having good glass forming properties and/or havings lipophilic properties,~~ and a free radical
  - b) hyperpolarizing said mixture according to the DNP method to obtain hyperpolarized  $^{129}\text{Xe}$  and
  - c) optionally separating said xenon from the other components of the mixture.
2. (cancelled)
3. (Previously presented) A method according to claim 1, wherein the mixture in step a) is prepared from liquid xenon.
4. (Previously presented) A method according to claim 1, wherein the mixture in step a) is prepared by condensing xenon gas on the top of the at least one solvent or mixture of solvents and the free radical, warming the components until xenon and the at least one solvent or mixture of solvents are in a liquid state and mixing the components until a homogeneous mixture is obtained.
5. (Previously presented) A method according to claim 1, wherein in step b)  $^{129}\text{Xe}$  is directly hyperpolarized.

6. (Previously presented) A method according to claim 1, wherein in step b) the NMR active nuclei of the at least one solvent or mixture of solvents are hyperpolarized and this polarization is subsequently transferred to  $^{129}\text{Xe}$  by a cross-polarization sequence.
7. (Previously presented) A method according to claim 1, wherein xenon enriched with  $^{129}\text{Xe}$  is used.
8. (Previously presented) A method according to claim 1, wherein in step c) xenon is separated from the other components of the mixture by warming the mixture until xenon is in the gas state and collecting said xenon in a suitable container.
9. (Currently amended) A method for the production of a contrast agent comprising
  - a) preparing a mixture of xenon, at least one solvent or a mixture of solvents ~~which is a selected from the group of single chain alcohols, or a glycols, toluene, cyclopentane and methylcyclohexane, having good glass forming properties and/or lipophilic properties, and a free radical~~
  - b) hyperpolarizing said mixture according to the DNP method to obtain hyperpolarized  $^{129}\text{Xe}$
  - c) separating said xenon from the other components of the mixture, and
  - d) optionally condensing the separated xenon again.
10. (Cancelled)